REMARKS

Applicant has cancelled claims 106, 109, 110, 124-126, 128 without prejudice, amended claims 100, 102-104, 107, 111, 123, 129, 133, 134, and added new claims 135-143. The amended claims add no new matter and are fully supported by the application as filed. The claim amendments either correct typographical errors and omissions in the text of the claims or have been amended to bring the claims in accord with the restriction requirement. Applicants have amended the claims without prejudice, and reserve their right to pursue any matter in the original claims in any other appropriate patent application.

The new claims add no new matter and are fully supported by the application as filed. For example, for claim 135, see pages 4-8, page 9 , lines 21-24, page 11, lines 5-24, page 14, lines 9-19, page 16, lines 7-16, page 17, lines 22-26, Examples 15, 17, and 18; for claim 136, see page 5, lines 16-20, page 8, line 26 – page 9, line 3; for claim 137, see page 30, Example 14; for claim 138, see page 10, lines 11-22; for claim 139, see page 16, lines 7-16; for claim 140, see page 7, lines 11-16, page 16, lines 17-21; for claim 141, see page 7, lines 17-19, page 16, lines 22-26; for claims 142 and 143, see page 17, lines 19-26, p. 32, Example 16.

CONCLUSION

In view of the foregoing, Applicants respectfully request the Examiner to favorably consider and allow the pending claims.

The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Lyon & Lyon's Deposit Account No. **12-2475**.

Respectfully submitted,

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VERSION OF CLAIMS WITH MARKINGS

100. (Amended) A method of regulating expression of a desired gene in an animal, [plant or cell,] said method comprising:

administering to said animal[, plant, or cell] a pharmacological dose of a ligand which binds to a mutated steroid receptor superfamily ligand binding domain,

wherein said animal[, plant, or cell,] contains:

(a) a first nucleic acid cassette which comprises a promoter transcriptionally linked to a mutated receptor protein coding sequence,

wherein said mutated receptor protein coding sequence comprises a nucleic acid sequence encoding a mutated receptor protein which regulates the transcription of a molecular switch promoter, and wherein said mutated receptor protein comprises:

a DNA binding domain which binds said molecular switch promoter;

a mutated steroid hormone receptor superfamily ligand binding domain distinct from a naturally occurring ligand binding domain;

a transactivation domain which causes transcription from said molecular switch promoter when said mutated receptor protein is bound to said molecular switch promoter and to an antagonist for a nonmutated receptor protein; and

(b) transcriptionally linked to said molecular switch promoter, a nucleic acid encoding a desired protein in a second nucleic acid cassette; wherein administration of said ligand regulates expression of said desired gene in said animal[, plant, or cell].

102. (Amended) The method of claim 100, wherein the mutated receptor protein is comprised of a [progersterone] progesterone receptor with the native DNA binding domain replaced with a GAL-4 DNA binding domain.

103. (Amended) The method of claim 100, wherein the nucleic acid encoding said desired protein is transcribed to produce an mRNA molecule that is translated to produce a protein after the animal[, plant or cell] is given a dose of a ligand which binds to the mutated steroid hormone receptor superfamily ligand binding domain.

104. (Amended) The method of claim 100, wherein the first nucleic acid cassette and the second nucleic acid cassette in said animal[, plant, or cell] are on separate plasmids.

107. (Amended) The method of claim [106] 100, wherein said animal is a mammal.

111. (Amended) The method of claim 100, wherein the molecular switch is linked to a nucleic acid cassette thereby forming a cassette/molecular switch complex and said complex is positionally and sequentially oriented in a vector such that the nucleic acid in the cassette is transcribed and translated in said target animal[, plant, or cell].

123. (Amended) The method of claim 100, wherein said mutated steroid receptor results from a deletion [in its] of carboxy terminal amino acids in the ligand binding domain.

129. (Amended) The method of claim [128] 100, wherein said ligand is 11 beta-(4-dimethylaminophenyl)-17 beta-hydroxy-17 alpha-propinyl-4,9-estradiene-3-one.

133. (Amended) The method of claim 101, wherein said mutated steroid receptor superfamily ligand binding domain is a Vitamin D ligand binding domain.

134. (Amended) The method of claim 133, wherein said mutated receptor is [up-regulated] activated when bound by the ligand 24,25-dihydroxy-Vitamin D.

135. (New) A method of regulating expression from a desired gene in an animal comprising:

administering to an animal a pharmacologic dose of a ligand that activates a molecular switch encoded by a first expression cassette and results in regulated expression of a desired gene from a second expression cassette, wherein the molecular switch comprises a mutated steroid hormone superfamily receptor ligand binding domain capable of activation by the administered ligand but not by a native ligand for a corresponding wild type steroid hormone superfamily receptor ligand binding domain.

136. (New) The method of claim 135, wherein the mutated steroid hormone superfamily receptor ligand binding domain is derived from a steroid hormone superfamily receptor selected from the group consisting of:

estrogen; progesterone; glucocorticoid-α; glucocorticoid-β; mineralcorticoid; androgen; thyroid hormone; retinoic acid; retinoid X; Vitamin D; COUP-TF; ecdysone; Nurr-1 and orphan receptors.

137. (New) The method of claim 136, wherein the ligand binding domain is a mutated progesterone ligand binding domain and the ligand is an anti-progestin.